



Callochiton jeareyae, a new species from South Africa (Mollusca, Polyplacophora)

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KEY WORDS: Mollusca, Polyplacophora, Ischnochitonidae, Callochitoninae, new species, South Africa.

ABSTRACT Recent research on the infralittoral Polyplacophora of Southern Africa has yielded a species which proved new to science. The species is described here as *Callochiton jeareyae* n.sp. It is compared to other congeneric species from the same geographical area.

RIASSUNTO In un gruppo di Polyplacophora del Sud Africa, è stata rinvenuta una nuova specie di *Callochiton*, raccolta tra 15 e 22 metri di profondità. *C. jeareyae* n. sp. è stata confrontata con le altre specie di *Callochiton* presenti nell'area geografica considerata.

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INTRODUCTION

Early in 1995, samples of Polyplacophora were obtained from Mr. Brian Hayes of Port Elizabeth, South Africa. The samples included specimens of the following species, *Callochiton dentatus* (Spengler, 1797), *Chiton (Rhyssoplax) crawfordi* Sykes, 1898, *Chiton nigrovirescens* De Blainville, 1825, *Chiton (Rhyssoplax) tulipa* Quoy & Gaimard, 1835, *Ischnochiton bergoti* (Velain, 1877), *Ischnochiton oniscus* (Krauss, 1848), *Ischnochiton textilis* (Gray, 1828), *Acanthochitona garnoti* (de Blainville, 1825), the recently described *Lepidozona debruini* Strack, 1996 and *Craspedochiton productus* Carpenter in Pilsbry, 1892, recently placed in this genus by STRACK (1996).

Together with these samples, Mr. Hayes also sent a dried specimen of a *Callochiton* species, which he had collected from Cape St. Francis. The identity of this specimen could not be determined and more material was needed for further study. A few months later, Mr. Hayes, through the collaboration of a diver, Mrs. Mariette Jearey, managed to obtain two live collected specimens. These specimens were collected while diving at a depth of 15-22 metres. He preserved the extended animals in

alcohol and sent the material, which included another dried specimen, for our study.

Another specimen was sent to study by Hermann Strack, collected by B. de Bruin near Cape Town, 1 km off Buffels Bay, under rocks, -12/18m.

The specimens could not be assigned to any of the congeneric species from South Africa, nor to any of the other existing species. It is therefore described here as:

Callochiton jeareyae sp.n.
(Figs 1-15)

Material studied

The Holotype, Algoa Bay, -15m, now disarticulated, deposited at the Zoology Museum of Bologna University, reg. no. 11700

Paratype 1, Algoa Bay, -15m, preserved in alcohol, length 16 mm, deposited at the Natal Museum, reg. no. V392/T1443

Paratype 2, Cape St. Francis, -20/22m, dried, length 10 mm, in coll. C.Mifsud, reg. no. P2001

Paratype 3, Algoa Bay, -15m, dried, length 12 mm, in coll. B.Dell'Angelo, reg. no. 4385

Paratype 4, False Bay, 1 km off Buffels Bay, near Cape Town, -12/18m, preserved in alcohol, length 15 mm, in coll. H.Strack (B. de Bruin leg., iii.93)

Diagnosis

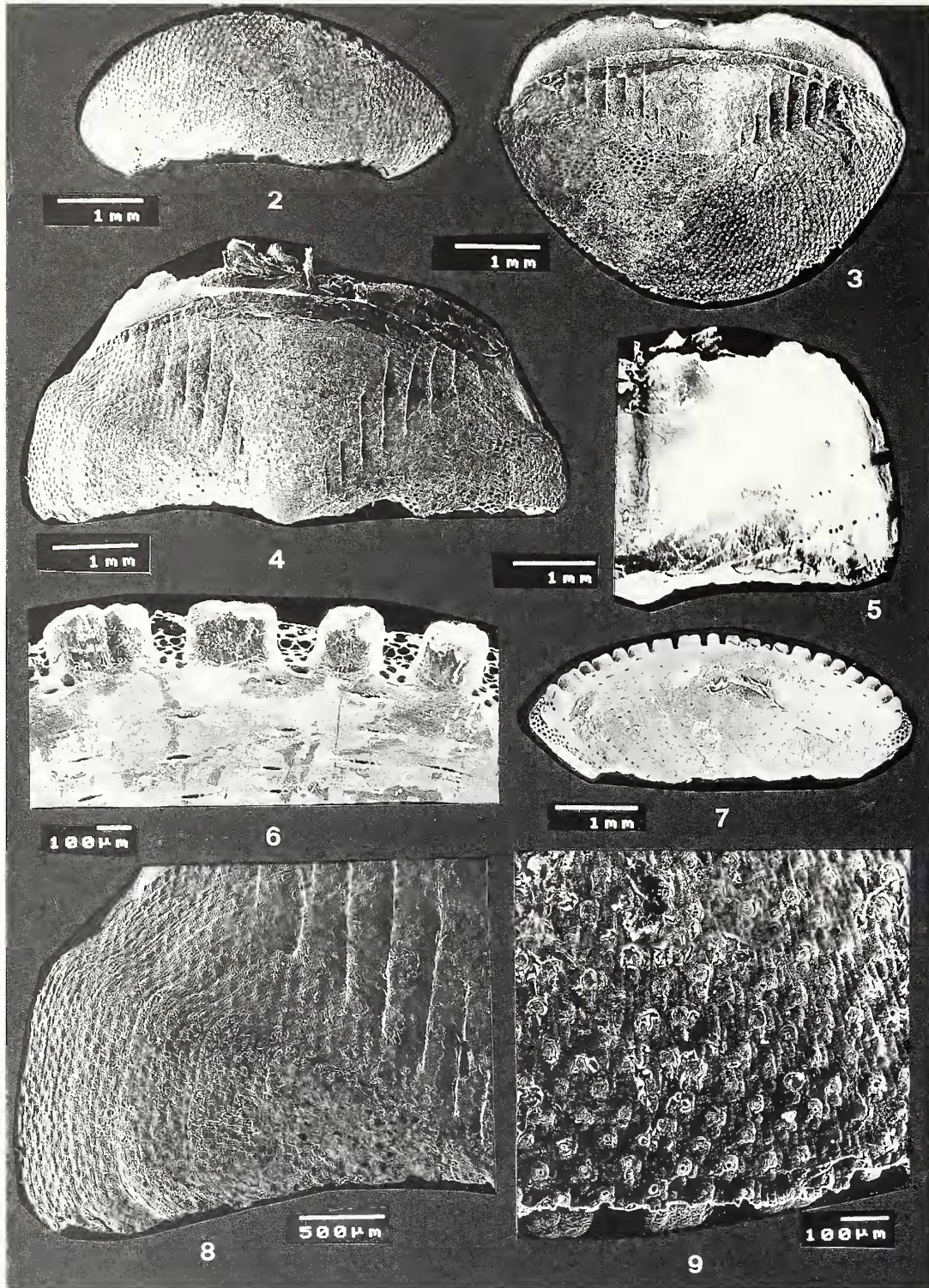
Animal of moderate size, up to 16 mm long, oval in outline, valves moderately elevated, subcarinated, not beaked, tegmen-tum minutely granulose, with 6-7 longitudinal grooves on both sides of central areas; girdle rather wide, spiculose. Colour reddish, with or without white or creamy white blotches.

Description

Animal of moderate size, up to 16 mm long, 8 mm wide, oval in outline, valves moderately elevated (dorsal elevation c. 0,4), subcarinated, not beaked. Colour reddish, with or without whi-



Fig. 1 - *C. jeareyae* n. sp.: Paratype 1, whole specimen (length 16 mm)

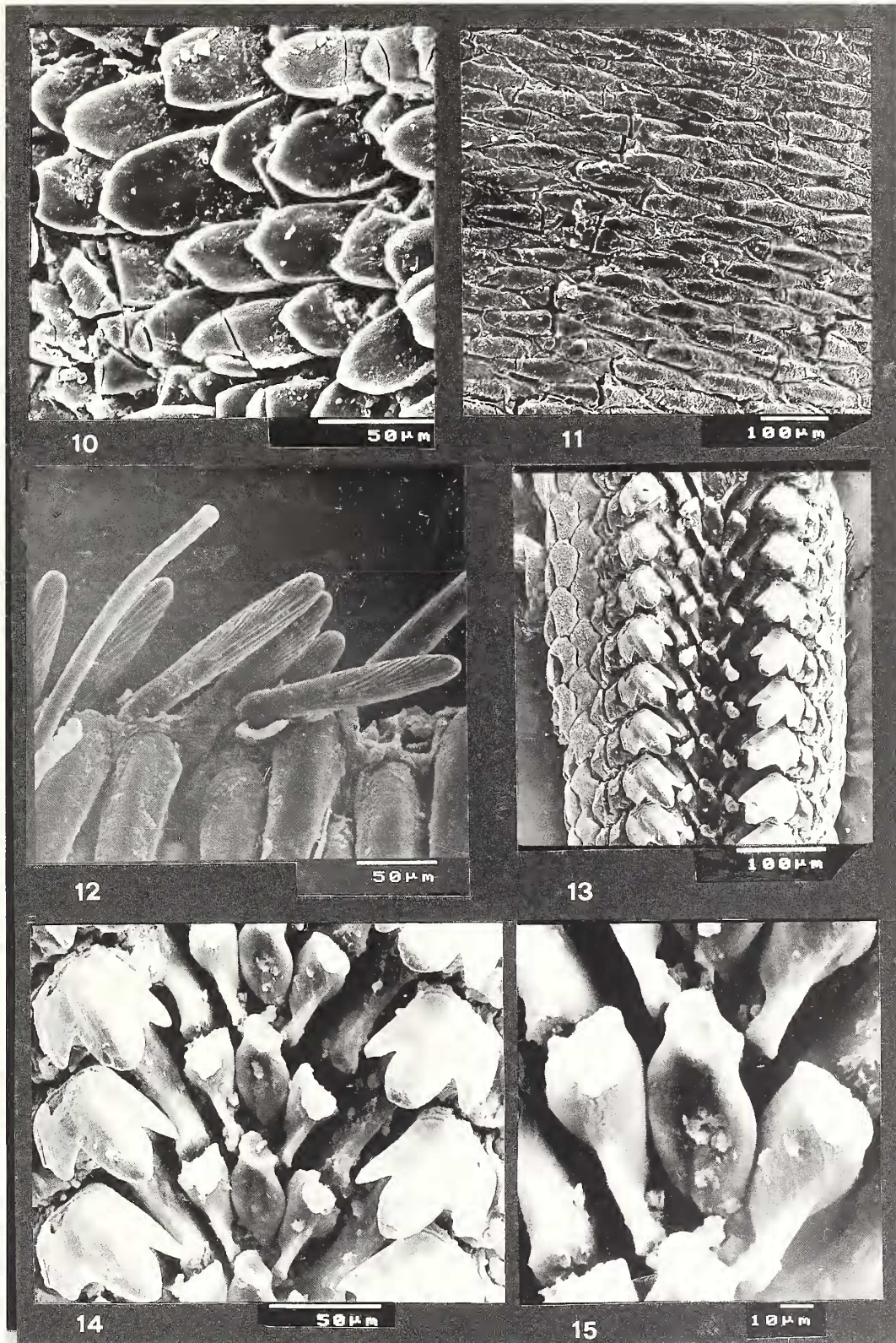


te or creamy white blotches. Tegmentum minutely granulose, closely beset with black dots (the pigment cups of the shell-eyes) in head valve, lateral areas of intermediate valves and post-mucronal area of tail valve.

Head valve less than semicircular, posterior margin almost straight. Intermediate valves broadly rectangular, anterior margin slightly convex, side margins rounded, posterior margin a

little concave at both sides of the apex; lateral areas raised. Central areas sculptured with 6-7 longitudinal grooves on both sides, generally not reaching the front margins of the valve. Tail valve semicircular, with a small, hardly raised central mucro; antemucronal area sculptured like the central areas of intermediate valves.

Articulamentum reddish, of the same colour as the tegmen-



Figs 2-15 *Callochiton jeareyae*: 2 - holotype, head valve; 3 - holotype, tail valve; 4 - holotype, intermediate valve; 5 - holotype, part of intermediate valve, ventral view; 6 - holotype, dentition of tail valve; 7 - holotype, tail valve, ventral view; 8 - holotype, left half of intermediate valve; 9 - holotype, granulation of head valve; 10 - holotype, ventral side of girdle; 11 - holotype, dorsal side of girdle; 12 - paratype 1, marginal spicules and solitary spines; 13 - paratype 3, radula; 14 - paratype 3, radula; 15 - paratype 3, central and first lateral radula teeth.



tum; apophyses very wide, short, connected at the jugum by a concave lamina; insertion plates short, teeth irregular, somewhat thickened at the edges, eaves porous, slit rays indicated by porous dots. Slit formula 21/2-3/16.

Girdle rather wide, coloured like tegmentum, mostly with white bands positioned next to the sutures of valves I/II and VII/VIII, very densely covered with fine, elliptical, rough spicules, about 100-150 mm long, 25-30 mm wide (in the median zone). Dispersed near the border in the dorsal area, there are a few relatively long solitary spines, smooth, which may be up to 330 mm long. Marginal spicules about 150-160 mm long, 20 mm wide, smooth at the base (one third) and sculptured with a few oblique grooves. Ventral side of the girdle covered with more or less oviform scales, smooth, imbricated, up to 60 mm long.

Central teeth of radula "tulip" shaped with sharp cutting edge, stems of first laterals angular in section, strong, also with sharp cutting edges. Major laterals with a tricuspidate and bifurrowed head, the central cusps much larger than the outer ones.

Etymology

Named in honour of Mariette Jearey, who collected part of the material for this study.

Distribution

Only known from South Africa, from False bay to Algoa bay (Fig. 16).

Remarks

The genus *Callochiton* of the subfamily Callochitoninae consists of about 33 species, distributed along the Western Pacific ocean, the North East Atlantic ocean, the Mediterranean sea, the Indian ocean and Australasia.

From the South African region, only two species of *Callochiton* had been known up till now, namely, *C. dentatus* (Spengler, 1797), a large species (up to 55 mm long) completely different from *C. jeareyae*, and *C. herberti* Kaas & Van Belle, 1990 which is smaller (up to 6 mm long), more depressed (dorsal elevation 0.24), has a different valve and articulamentum structure and fewer teeth on the insertion plates (slit formula 14-16/2/11-14). The other species of *Callochiton* described from adjacent geographical areas are *C. clausadeae* Kaas & Van Belle, 1985 from Madagascar, *C. vanninii* Ferreira, 1983 from Red Sea, Somalia,

Madagascar, Reunion and Mauritius and *C. deshayesi* Thiele, 1909 from Mauritius. These are both significantly different from the new species described here, especially in the slit formula and tegmental sculpture.

C. jeareyae shows remarkable similarities with *C. septemvalvis* (Montagu, 1803) which has a very wide distribution, from the East Atlantic through all the Mediterranean (KAAS & VAN BELLE, 1985). This is especially so for the Mediterranean form generally characterised by the presence of 3-5 longitudinal grooves on both sides of the central areas of the median valves, erroneously cited in the past as *C. septemvalvis euplaeae* (O.G. Costa, 1829) (see DELL'ANGELO & PALAZZI, 1994). However there is a fundamental difference in the tegmental sculpture, very finely grooved in *C. septemvalvis*, minutely granulose in the new species. The sculpture of the tegmentum of *C. septemvalvis* has been exhaustively dealt with in BAXTER & JONES (1984) and we refer to that work for the illustration of the microsculpture.

Acknowledgements

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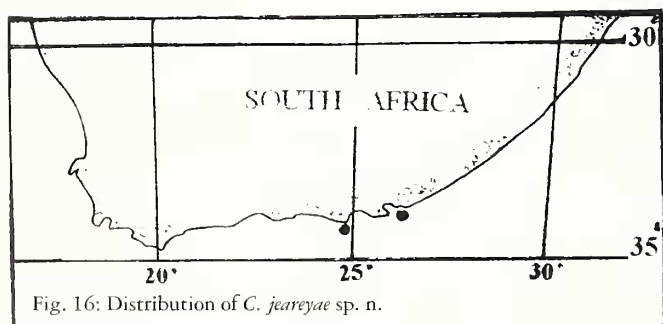


Fig. 16: Distribution of *C. jeareyae* sp. n.